# Diagnosing Plant Problems

Diagnosing plant problems can be a difficult task, as there are numerous potential factors that can affect the health of the plant. The most common of these factors include: infectious disease, insects, weather, the planting site, and environmental and cultural conditions. Making it even more difficult to effectively diagnose plant problems is that different factors can combine and influence one another, affecting the overall well being of a plant. Often times, the most effective way to determine what the problem with a plant is, is to ask yourself questions, and narrow down what the factors may be.

# Initial Questions to Ask

- **What is the plant in question?**
  Recognize what is regular and irregular behavior for a plant. For example, leaf dropping or strangely colored new growth may in fact be a normal part of a particular plants behavior.

- **When was it planted?**
  If the plant was just recently transplanted to the site, odds are it is going through some initial stress from the transplant. If this is the case, keep your eye on it and make sure it gets plenty of water during this crucial period. Additionally, you may want to research the plant and make sure it is planted in a suitable site for its behavior. Follow with questions such as: Is it getting enough light? Do the soil conditions (drainage, pH) suit this plant?

- **What is the planting site history**?
  Has there been any recent construction, chemical spraying or fertilization done around the plant recently that may interfere with normal development?

- **Is recent weather a factor?**
  Ask yourself, has there been any uncharacteristic hot or cold spells? What about drought or excessive rain? Often times, strange swings in weather can affect the behavior of a plant. For instance, a cold spell after a warm weather period can kill off new growth that was triggered by the warmer weather. If moisture is a factor, water or let the soil dry out accordingly.

# Assessing Plant Symptoms

Once you have ruled out some of the more obvious causes of plant problems, begin to ask yourself, what symptoms is the plant showing? When doing so, inspect the entire plant from top to bottom while noting everything that is happening to it. From there, try and determine whether the problem is infectious (caused by a pathogen) or non-infectious (insect related, environmental, chemical, nutritional). Analysis of different symptoms will help lead you to the correct diagnosis and thus, an effective treatment for the plant.

**Infectious diseases** often appear sporadically and without pattern. They are also typically associated with a particular plant or cultivar. That being said, plant diseases usually occur because the environment is favorable for their development, therefore if one plant develops an infection, others may as well, though it will likely be a different type of infection. Additionally, if the problem appears to be spreading, it is more than likely infectious. Common infectious disease symptoms include: leaf spots, rotting, discoloration, wilting, the formation of galls, stunted growth, and plant dieback among others.

In contrast**, noninfectious diseases** are often distributed evenly on an individual plant or over a larger area with no bias towards a particular species. Noninfectious diseases include: insect damage, problems with soil moisture, pH that is too high or low, nutrient deficiencies, environmental extremes, chemical injuries (herbicides, pesticides, runoff, or other pollutants), and mechanical injuries (broken stems, mower damage, etc). If the problem is remaining localized in a particular spot, it is more than likely noninfectious.

Non-infectious problems and their symptoms:

- **Insect damage** – ragged/chewed leaves, tunneling or holes throughout the plant, plant decline, insect droppings around plant
- **Soil moisture** - scorch symptoms on leaf tips and veins, chlorosis (leaf yellowing), shedding of older leaves, and wilt.
- **Too high or low pH/nutrient deficiency** – a soil's pH will affect the plant's ability to absorb nutrients in the soil. Thus, if the pH is off, plant symptoms will take the form of nutrient deficiencies, namely: stunted growth, changes in foliage color, and death of older foliage and new growth. The symptom will depend on the nutrient that is deficient in the plant.
- **Excess heat** – scorch on leaf tips and veins
- **Excess cold** – Death of exposed foliage, especially new growth
- **Light** – yellowing of leaves, reduced growth, leaf drop, lack of flowering
- **Chemical injury** – leaf burn, distortion, bleaching, or chlorosis, often in a uniform pattern
- **Mechanical injury** – bruised, punctured, or broken stems and leaves; girdled roots, and noticeable damage to the trunk where a weed trimmer or mower would have passed

## Treatment of the Plant

Diagnosis of the plant is only half the battle, as the plant may also need treatment to keep the problem from reoccurring or to recover from the damage it has endured.

If an **infectious disease** is suspected, it may be too late for an application treatment, as most fungicides are preventative rather than curative. This does not however mean doom to the plant rather, if the problem is detected early, with a little tender loving care, the plant should recover just fine.

Firstly, remove all infected parts of plant, destroy the debris thoroughly (do not add to compost), and clean all equipment used. Often times, infectious diseases occur because the environment of the plant if favorable to host a pathogen. This favorable environment is typically wet with little air movement. Therefore, prune the plant cut back foliage around it to promote adequate airflow. If you irrigate, do so in the morning to prevent moisture from sitting on the plant's foliage overnight.

Next, make sure that the plant is healthy, i.e. receiving adequate moisture, light, nutrients, etc. as an unhealthy plant is much more susceptible to disease. From there, work towards future disease prevention. Examples of this include: the application of fungicides during wet periods, and crop rotations to prevent infectious diseases from staying in the soil.

**Noninfectious disease** treatment will depend on the problem that is being detected. If the problem is uncontrollable (mechanical injury, chemical injury, extreme weather) prune out damaged parts of the plant and see to it that the plant receives plenty of future attention (moisture, light and nutrients as necessary) as it recovers.

For insect damage, physically remove the insect, introduce a predator, set traps, or apply a pesticide. Be sure to identify the insect so that the correct pesticide is applied at the right time. Different insects have different life cycles and inhabit different parts of the plant; therefore, treatment of each will be different. Additionally, if you choose to apply a pesticide, make sure that the insect is still present otherwise the application will be a waste of time and money. For further information on insect and pest control, consult our "Pest Management" Helping Hand Hints.

If a problem with soil pH or a nutrient deficiency is detected, have your soil tested to determine its pH and/or the nutrient(s) that are lacking and amend the soil as necessary.

If the plant is located in a problem site, consider relocating the plant. Or, if possible, alter the location by cutting back surrounding vegetation to increase light and airflow and/or amend the soil accordingly.

*We at Bennett's are here everyday to give "Helping Hand Hints" personally, one on one. Many gardening problems are very specific, and we couldn't possibly cover all aspects in these pamphlets. Any time you have a specific problem or need help, feel free to call. It's our job to help you be successful in your growing endeavors, and we thoroughly enjoy giving you a "helping hand."*

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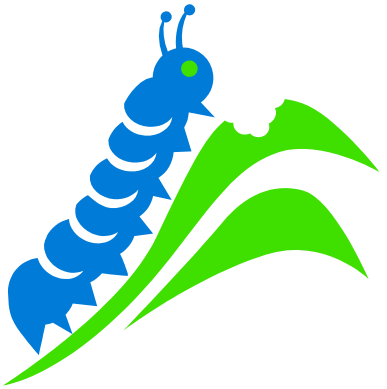
# Helping Hand Hints



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